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General Physiology is the study of biological mechanisms through analytical investigations, which decipher the molecular and cellular mechanisms underlying biological function at all levels of organization.

The mission of the *Journal of General Physiology* is to publish articles that elucidate important biological, chemical, or physical mechanisms of broad physiological significance.

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Cover picture: Imaging Ca^{2+} flux through individual ion channels by total internal reflection fluorescence microscopy (TIRFM). Top schematic illustrates the optical "sectioning" of a Ca^{2+} microdomain around a single channel by the evanescent wave formed using through-the-lens TIRFM. Bottom panel shows several single-channel Ca^{2+} transients arising through openings of nicotinic receptors expressed in the membrane of a *Xenopus* oocyte (see article by Demuro and Parker, 179–192).

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Cover picture: Coregulation of Kir2.1 channels by PIP_2 and long polyamines (PA). The channel opens (O) when interacting with PIP_2 and closes when this interaction is lost, either transiently (C) or due to PIP_2 depletion (rundown, R) or screening by neomycin (CN). PA strengthens the open channel–PIP_2 interaction (OA) and also causes voltage-dependent block (BA) (see article by Xie et al., 541–549).